

4.0 PHIL'S AUTO SITE – 701 ISLETA BOULEVARD, SW NMED Facility Number 5517001

4.1 INTRODUCTION/SITE HISTORY

The Phil's Auto Site (the Site) is located at 701 Isleta Boulevard SW. Hydrocarbon releases were first discovered in the Site vicinity in July 1987, when hydrocarbon odors were reported in a nearby private water well. NMED subsequently identified at least five private wells located west and southwest of the Site. NMED sampling of these wells identified BTEX compounds in two of the wells. The facility is no



Phil's Auto Facility looking Northwest

longer used to dispense fuels and is currently operated by Mr. Phil Moya as an automotive repair facility.

Based on a comprehensive review of available historical data, past Site knowledge, and completion of a detailed site inspection, FEI/TPA presents the following site summary. In addition, detailed maps were constructed summarizing known Site conditions (Figures 4A and 4B).

- The Site was used to dispense fuel for several decades. Based on available site data, three USTs containing gasoline were formerly located along the northern side of the property (Figure 4A). Analysis of inventory records indicated a cumulative loss of over 8,500 gallons from the unleaded and regular UST systems. These tanks were removed from the ground in October 1993.
- In 1990, Resources Technology, Inc. (RTI) was retained by the responsible party to conduct a site investigation. RTI installed and sampled three wells at the Site (MW-1, MW-2, and MW-3) and advanced temporary soil gas/groundwater sampling points at 10 additional locations to the south and west of the Site. No TPH soil samples were collected during the investigation. Data collected during their investigation revealed the presence of a soil and groundwater BTEX contaminant plume extending south and southwest of the station.
- In 1993 the NMED retained Gram and Associates, Inc. (Gram) to conduct site investigation activities as part of the GWPA State lead program. Gram conducted a two-stage investigation during 1993,

during which seven new monitor wells and five boreholes were advanced and sampled at the Site. Their investigations documented a southwesterly trending groundwater BTEX contaminant plume extending several hundred feet off-site. Unfortunately, during their investigations, TPH soil data was not collected in any of the drilling locations and no boreholes or wells were installed in the tank pit area. The magnitude and extent of the soil contaminant plume was not characterized to the west, north, east or southeast (Figure 4A).



- Based on Gram's Investigation, depth to static groundwater at the Site has been measured to be approximately 11 to 12 feet below ground surface (bgs). Calculated shallow groundwater flow is to the south-southwest at a gradient of approximately 0.0006 feet/foot. Site lithology, as reported in borehole logs, appears to be a coarsening downward sequence consisting primary of silty sands and fine to medium grained sands grading to coarser grained sands near and below the water table.
- Phase Separated Hydrocarbon (PSH) was identified at levels up to 5" in thickness in monitor wells MW-1, MW-2, MW-4, and MW-5. Soil laboratory BTEX values from soil samples collected from these locations appear anomalistically low, considering PSH was identified at each of these locations. Gram collected laboratory soil samples above the air-water interface in the soil borings above the primary zone of contamination.
- In 1994, Intera, Inc. (Intera) was retained by NMED to design and install a remediation system. Intera submitted a reclamation proposal to NMED in April 1994 for installation of a SVVSTM in-situ reclamation system. A short-term pilot test for the site was performed on a combination sparge/vent well cluster located in the northern portion of the site (Figure 4B). Intera reported induced flows of up to 60 standard cubic feet/minute (scfm) at a vacuum of only 4" of H₂O, indicating a highly transmissive subsurface environment. Sparging was also initiated at the Site at a reported rate of 23 scfm at approximately 4.7 psi. Intera calculated a radius of influence for the VE well to be greater than 20 feet. Based on the induced flow and vacuum, this number is likely to be even higher.
- The approximate extent of soil hydrocarbon contamination prior to remedial efforts is shown in Figure 4A. TPH soil contamination was likely concentrated in the central and northern vicinity of the Site. Analysis of laboratory chromatograms suggests gasoline contaminants at the Site were weathered in nature. A larger diameter vapor-phase hydrocarbon zone likely surrounds the TPH contamination core.

- An in-situ SVVSTM reclamation system was installed at the Site in 1995 and began operation in September 1995. The reclamation system consists of 33 combination sparge/vent well nests manifolded via underground PVC piping to an aboveground treatment unit. Wells were constructed of 2" diameter, schedule 40 PVC with crushed stone surrounding the vent wells and 10-20 silica sand surrounding the sparge wells. Bentonite seals were emplaced between the screened intervals and the land surface. The above ground treatment unit consists of a 300 scfm catalytic oxidizer and vent and sparge blowers. The system operated between September 1995 and early 1996 when it was shutdown.
- During our recent site inspection, above ground treatment equipment appeared to be in good condition. The majority of the monitor wells observed at the Site also appeared to be in good condition, with the exception of MW-8, which was reported as destroyed during reclamation system installation. Off-site downgradient wells were not inspected due to site access restrictions.
- The most recent 1998 groundwater sampling of select monitor wells at the Site documented significant reductions in BTEX concentrations in monitor wells MW-1, MW-2, MW-4, and MW-10. During the 1998 sampling event, PSH was not documented in monitor wells MW-2 and MW-4, as had been the case during previous sampling events. Current dissolved-phase groundwater quality is unknown.



Catalytic Oxidizer and Equipment Compound

4.2 EXISTING SITE CONDITIONS

Based on the above data, the following potential deficiencies need to be further evaluated:

- The current monitor well network is inadequate to define the magnitude and extent of remaining ground water contaminants.
- Remedial design of the treatment system does not allow for individual operation of well nests. Instead, three manifold well boxes (see photograph next page; Figure 4A) are located at the Site which allow adjustment of groups of wells. This type of arrangement often leads to the creation of "dead zones" in the subsurface between treatment wells where little or no remediation has occurred.



- The soil hydrocarbon plume at the Site has never been fully characterized, especially in the vicinity of the former tank pit. In addition, post-remedial characterization of the soil/PSH source area needs to be documented, especially between treatment well nests. These borings should be continuously sampled for lithology and analyzed for soil TPH and BTEX.
- Adjacent private water supply wells need to be re-sampled, as do existing monitor/remediation wells.

4.3 RECOMMENDED ACTIONS

Task One – Site Review and Work Plan Development

This task provides for the review of NMED/USTB files, site mapping and photography, review of historic ground water and soils data, and final preparation of this work plan for additional investigation.

Task Two – Sample Existing Wells and Conduct Three Additional Quarterly Sampling Rounds

Ground water in all usable wells (eight existing wells) will be sampled during an initial event for organic parameters including BTEX, MTBE, EDC, EDB, and naphthalene using EPA Method 8260. The following natural attenuation indicators will also be sampled for using field test kits: dissolved oxygen (DO), nitrate (NO₃), dissolved and total iron (Fe), alkalinity (HCO₃/CO₃), phosphate (PO₄), and sulfate (SO₄). Additional field tests will include pH, temperature, and conductivity. FEI/TPA will provide NMED/USTB and BCEHD 48-hour notification prior to initiating any sampling. We also propose three additional quarters of groundwater sampling for BTEX, TMB, EDB, EDC and MTBE using EPA Method 8021 (EDX) and for the above natural attenuators. We propose sampling 10 wells in the second quarter, 14 wells in the third quarter and 10 wells in the fourth quarter.

During each sampling event, ground water levels will be measured prior to sampling. Collected data will be used to define drilling locations as needed in Task Three below. New locks and well caps will be installed on all usable monitoring wells. Quarterly reports will be submitted according to the requirements of USTR §1216.

Task Three - Hydrogeologic Investigation

General – FEI/TPA will characterize the magnitude and extent of post-remedial soil and ground water contamination in the Site vicinity through advancement and sampling of soil borings and monitor wells. Tentative drilling locations are shown in Figure 4B. Off-site access will be required for several drilling locations. For the purposes of cost estimation and based on a comprehensive review of the Site data, we propose the following number of soil borings and wells:

Projected Drilling Activity

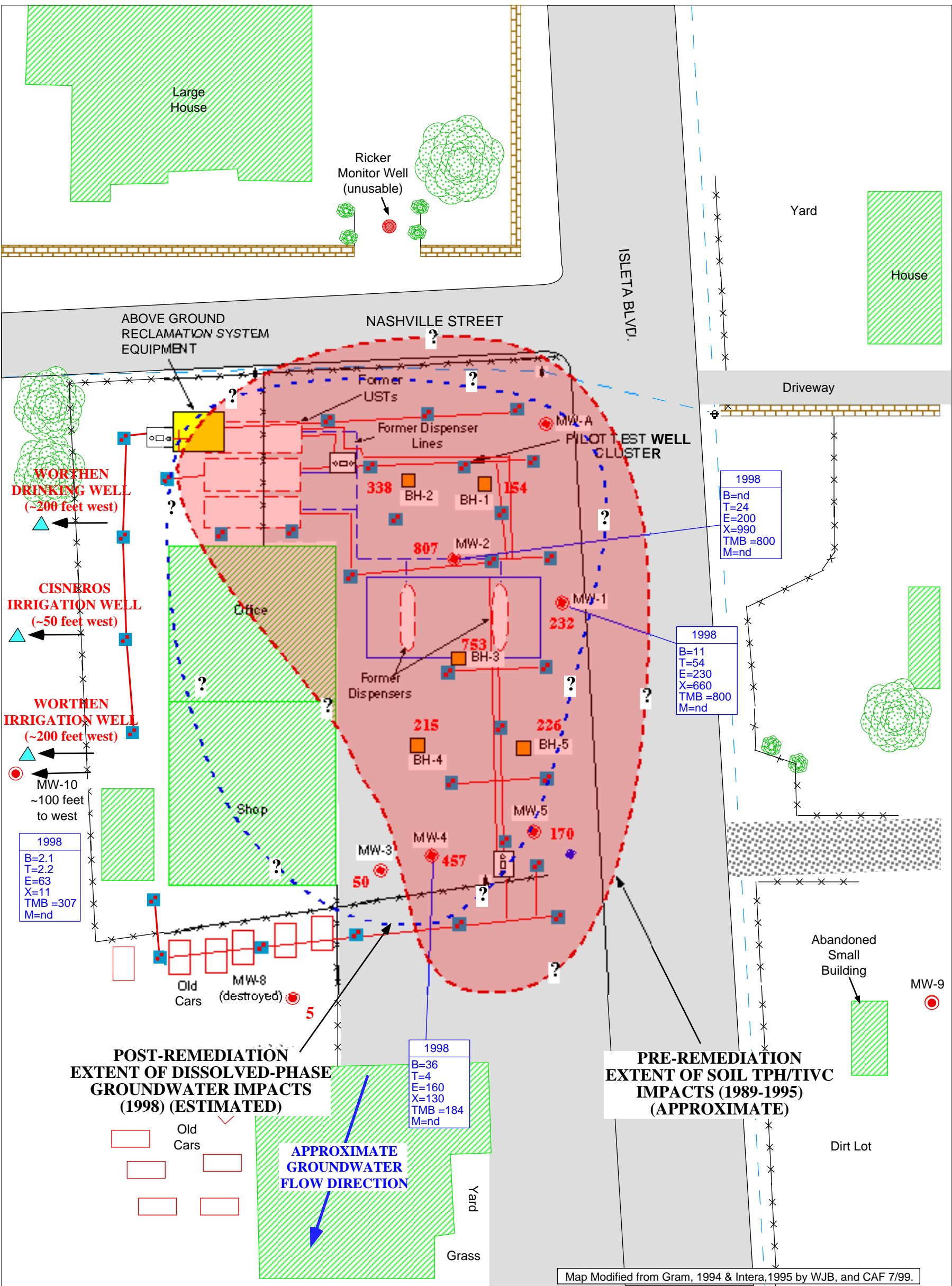
- 11 - Soil borings
- 5 - 2" diameter shallow completion monitor wells

All soil borings will be sampled on a continuous basis using either 2-foot long split spoons or 5 foot long core barrels. PID headspace analysis will be conducted on retrieved soil samples at five-foot intervals or less and at the water table. One to two laboratory soil samples will be collected from each drilling location and analyzed for TPH (gasoline-range) using EPA method 8015 modified and for BTEX and MTBE using EPA Method 8021. Samples will be collected for gasoline-range compounds using methanol extraction kits. New ground water monitoring wells installed during this task will be sampled and analyzed for the same EPA 8260 hydrocarbon parameters, natural attenuation indicators and field tests which were described for the initial well sampling in Task 2. Additionally, all new and existing wells will be surveyed to a common USGS (or other) established Mean Sea Level benchmark datum by a NM licensed surveyor.

Task Four - Completion of the Hydrogeologic Investigation (HI) Report

Upon receipt of all field data, FEI/TPA will prepare a summary HI Report. This Report will include geologic and contaminant distribution cross sections, isoconcentration maps, a ground water isocontour map, appropriate tables, and text summarizing the results of the investigation as they relate to plume characterization and site remediation, and the requirements of the USTR. In addition, residual hydrocarbon spill mass estimates will be included.

At this time we do not recommend testing of the on-site remedial system. Should Tasks Two and Three indicate the need for further remedial action, the reclamation system can be examined in more detail.



Map Modified from Gram, 1994 & Intera, 1995 by WJB, and CAF 7/99.

EXPLANATION:

- Present Monitor Well Location
- Sampling Date
- B=Benzene
- T=Toluene
- E=Ethyl Benzene
- X=Total Xylenes
- TMB=Tri-Methyl Benzenes
- M=(MTBE)
- All concentrations in Parts Per Billion (ppb)
- Monitor Well Lost or Destroyed
- Soil Boring Location (approximate)
- 215 PID Reading in ppm/v (data from RTI, 1990; Gram, 1994)
- Previously Installed Sparge/Vent Well Cluster
- ▲ Private Water Supply Well
- Building
- Asphalt
- OE — Overhead Electric Power Pole
- Well Control Box
- Subsurface Piping
- Adobe or Brick Wall
- Fence
- Vegetation
- Scale: 0 15 30ft

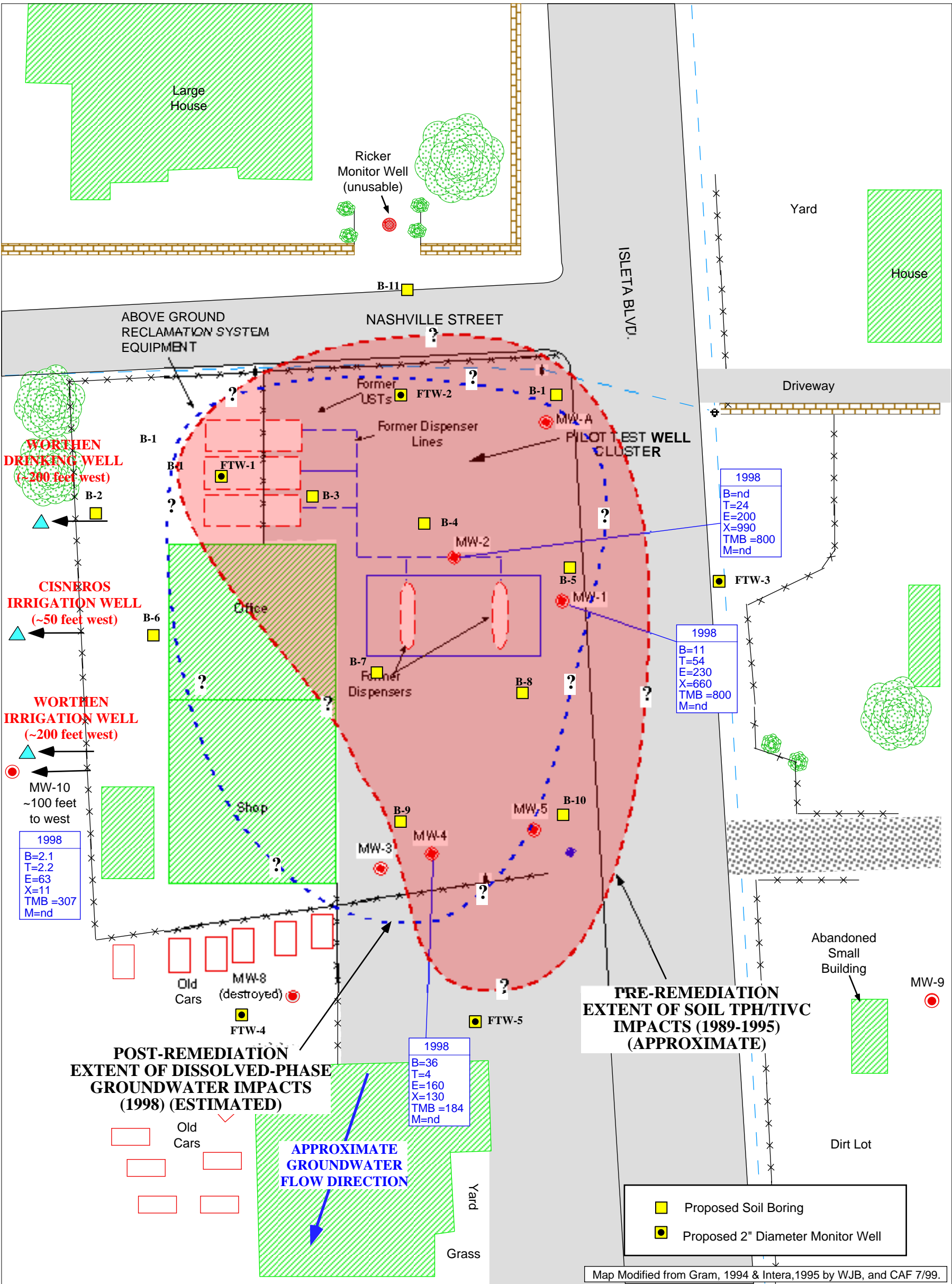
Soil and Groundwater Quality Summary Map

Phil's Auto Site
701 Isleta Blvd., SW
Albuquerque, New Mexico

FEI FAITH ENGINEERING, INC.

TECUMSEH PROFESSIONAL ASSOCIATES, INC.

Drawn by:	WJB	7/99	Client: BCEHD
Drafted by:	ABL	7/99	Job # 035-001
Reviewed by:	WJB	7/99	Figure: 4A



EXPLANATION:

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- Building
- Asphalt
- OE Overhead Electric Power Pole
- Well Control Box
- Subsurface Piping
- Adobe or Brick Wall
- Fence
- Vegetation

Scale: 0 15 30ft

Proposed Drilling Locations

Phil's Auto Site
701 Isleta Blvd., SW
Albuquerque, New Mexico

FEI FAITH ENGINEERING, INC.		TECUMSEH PROFESSIONAL ASSOCIATES, INC.
Drawn by:	WJB	7/99
Drafted by:	ABL	7/99
Reviewed by:	WJB	7/99
Client: BCEHD		Job # 035-001
Figure: 4B		

12/1/95•BJWR	0	NEW MEXICO CORRECTIVE ACTION FUND COST DETAIL FORM — SUMMARY SHEET	
Site Name: Phil's Auto		Site Address: 701 Isleta SW Albuquerque, NM 87105	
Circle only one:	Circle only one:	Phase 2 — Free Product / Saturated Soil Recovery	Phase 4 — Reclamation Implementation
<input type="checkbox"/> Work plan	<input type="checkbox"/> Claim	<input type="checkbox"/> Phase 1 — Hydrogeo Investigation	<input type="checkbox"/> Phase 3 — Reclamation Proposal
		<input type="checkbox"/> Phase 5 — Operations and Maintenance	
FIXED-PRICE CONTRACT FOR ALL TASKS IN PHASE 1 AND 5		NMED Use Only	
SUMMARY SHEET	TOTAL	Project Manager	Auditor
PROFESSIONAL SERVICES	\$28,480.00		
TAXABLE EXPENSES	\$4,921.00		
TAXABLE SUBCONTRACTORS	\$13,500.90		
TAXABLE SUBTOTAL	\$46,901.90		
NMGRT RATE 5.5625% X TAXABLE SUBTOTAL =	\$2,608.92		
TOTAL	\$49,510.82		
NONTAXABLE EXPENSES			
NONTAXABLE SUBCONTRACTORS			
NONTAXABLE SUBTOTAL			
GRAND TOTAL OF CLAIM	\$49,510.82		

12/1/95•BJWR

NEW MEXICO CORRECTIVE ACTION FUND COST DETAIL FORM — PROFESSIONAL SERVICES

Site Name: Phil's Auto**Site Address:** 701 Isleta SW
Albuquerque, NM 87105**Circle only one:**☒ **Work plan** ☐ **Claim****Circle only one:**

Minimum Site Assessment

☒ **Phase 1 — Hydrogeo Investigation**Phase 2 — Free Product /
Saturated Soil Recovery

Phase 3 — Reclamation Proposal

Phase 4 — Reclamation Implementation

☐ **Phase 5 — Operations and Maintenance**

FIXED-PRICE CONTRACT FOR ALL TASKS IN PHASE 1 AND 5

NMED Use Only

PROFESSIONAL SERVICES	Invoice #	Rate	Unit	# of Units	Total	Project Manager	Auditor
initial sampling + 3 qtrs gw monitoring					\$12,440.00		
Drilling & Sampling (Hydrogeologic Investigation)					\$7,620.00		
Hydrogeologic Report					\$8,420.00		
Pilot Testing							
Site Review							
SUBTOTAL					\$28,480.00		

NEW MEXICO CORRECTIVE ACTION FUND COST DETAIL FORM — EXPENSES

Site Name: Phil's Auto

Site Address: 701 Isleta SW
Albuquerque, NM 87105

Circle only one:

☒ Work plan ☐ Claim

Circle only one:

Minimum Site Assessment

☒ Phase 1 — Hydrogeo InvestigationPhase 2 — Free Product /
Saturated Soil Recovery

Phase 3 — Reclamation Proposal

Phase 4 — Reclamation Implementation

☐ Phase 5 — Operations and Maintenance

FIXED-PRICE CONTRACT FOR ALL TASKS IN PHASE 1 AND 5

NMED Use Only

EXPENSES	Invoice #	Rate	Unit	# of Units	Total	Project Manager	Auditor
NONTAXABLE							
N/A							
NONTAXABLE SUBTOTAL							
TAXABLE							
initial sampling + 3 qtrs gw monitoring					\$2,422.00		
Drilling & Sampling (Hydrogeologic Investigation					\$1,992.00		
Hydrogeologic Report					\$507.00		
Pilot Testing							
Site Review							
TAXABLE SUBTOTAL					\$4,921.00		

Site Address: 701 Isleta SW
Albuquerque, NM 87105

Phase 5 — Operations and Maintenance

NMED Use Only

SUBCONTRACTORS	Invoice #	Rate	Unit	# of Units	Total	Project Manager	Auditor
NONTAXABLE							
N/A							
NONTAXABLE SUBTOTAL							
TAXABLE							
initial sampling + 3 qtrs gw monitoring					\$2,423.40		
Drilling & Sampling (Hydrogeologic Investigation					\$11,077.50		
Hydrogeologic Report							
Pilot Testing							
Site Review							
TAXABLE SUBTOTAL					\$13,500.90		